

PATENT SPECIFICATION

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DRAWINGS ATTACHED

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(54) IMPROVEMENTS IN OR RELATING TO VEHICLE REAR-VIEW MIRROR MOUNTINGS

(71) We, MAGNATEX LIMITED, a British Company, of Bath Road, Heathrow, Hounslow, Middlesex, do hereby declare the invention, for which we pray that a patent may be granted to us and the method by which it is to be performed to be particularly described in and by the following statement:—

This invention relates to vehicle external rear-view mirror mountings, particularly for use on lorries and other large commercial vehicles.

From one aspect, the invention consists in a vehicle external rear-view mirror mounting, comprising a mirror supporting arm pivotally connected to means adapted to be secured to a vehicle body or door, and a stay for steadying the mirror supporting arm and connected between the arm and a stay bracket adapted to be fixed to the vehicle body or door, the stay being releasably connected to said stay bracket by a head on the stay such that the head will separate from the stay bracket upon a force exceeding a predetermined value being applied to the mirror supporting arm.

Conveniently, the stay bracket includes a socket of resilient plastics material into which said head fits, said socket being expandable to allow the head to be withdrawn when the force applied exceeds said predetermined value.

The stay may be collapsible. For example the stay may be in two parts which are pivotally interconnected, the outer end of the stay being pivotally connected to the mirror supporting arm and the head being rotatable in the socket in the stay bracket.

From another aspect, the invention consists in a vehicle equipped with an external rear-view mirror mounting having a mirror supporting arm comprising a generally U-shaped frame with its free ends pivotally connected to the vehicle body or door so that the frame can turn relative to the vehicle body or door about a substantially vertical axis, and a stay which is

pivotally connected at one of its ends to the frame at a position spaced from said vertical axis and is provided at its other end with a head which is rotatably and releasably retained in a stay bracket, secured to the vehicle body or door at a position spaced horizontally from said vertical axis, such that the head can turn relative to the stay bracket about a substantially vertical axis and will separate from the stay bracket upon a force exceeding a predetermined value being applied to the frame, said stay comprising pivotally interconnected parts.

In order that the invention may be more readily understood, reference will now be made to the accompanying drawing, in which:—

Figure 1 is a perspective view of a vehicle external rear-view mirror mounting according to the invention,

Figure 2 is a section along the line II—II of Figure 1, and

Figure 3 is a section along the line III—III of Figure 1.

Referring to the drawing, the mirror head, indicated at 1, is carried on a mirror supporting arm comprising a generally U-shaped tubular frame 2 having at its free ends ball heads 3, 3' which are respectively located in sockets 4, 4' formed in brackets 5, 5' respectively moulded of resilient plastics material, such as polypropylene or the materials known under the Trade Marks "Delrin" or "Kematal," and provided with apertures 6 for fixing them to the outside of a vehicle body, such as the driver's cab or cab door of a lorry. The brackets 5, 5' are shown secured to the window frame of a lorry door C, the brackets being disposed substantially vertically one above the other. Each bracket has a horizontally extending channel 7 defined by walls 8, the inwardly facing surfaces of which are formed with part-spherical cavities forming the sockets 4, 4' for receiving respectively the ball heads 3, 3'. Each ball head may be incorporated as an insert in its respective bracket moulding.

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Each head is tightly resiliently gripped within its respective socket and cannot be removed therefrom. However, it can be turned with friction in its socket whereby the frame 2 can be pivoted about a substantially vertical axis passing through the ball head as described below.

The ball heads 3, 3' are secured to members 9, brazed into the free ends of the tubular frame 2, by fixing screws 10. As shown in Figure 2, each ball head is formed with a pair of diametrically opposite recesses 11, 12 separated by an apertured web 13. The free end of the associated member 9 is fitted into the recess 11 and the shank of the screw 10 is inserted through the aperture in web 13 into a screw-threaded socket 14 in the member 9. Co-operating flats are provided on the members 9 and in the recesses 11 for securing the heads against rotation about the longitudinal axes of the ends of the frame. Holes 15 are provided in the brackets 5, 5' behind the sockets 4, 4' respectively to enable the fixing screws 10 to be inserted.

A stay 16 connected between the frame 2 and the top frame of the cab door C acts as a steady. The stay comprises two tubular parts 17, 18 which are pivotally interconnected by a pin 19 passing through holes in flattened portions 20 at their adjacent ends. A spring or fibre washer (not shown) is provided on the pin 19 so that the two stay parts will normally remain in any relative position to which they are adjusted. The outer stay part 18 is also flattened at its outer end and is pivotally connected to a stamping 21, welded to the upper arm 22 of the frame 2, by a bolt 23. The inner end of the inner stay part 17 has a ball head 24 which is located in a socket 25 formed in a bracket 26 provided with apertures 27 for fixing it to the vehicle body. The bracket 26 is disposed horizontally in line with the bracket 5 such that the stay 16, when the parts 17, 18 are substantially aligned, extends substantially along the base of an isosceles triangle, the other sides of which are formed by the arm 22 of the frame 2 and the side of the cab C.

The bracket 26, which is also moulded of a resilient plastics material, such as those mentioned herein above, is generally similar to the brackets 5, 5' having a horizontally extending channel 28 defined by walls 29, the inwardly facing surfaces of which are formed with part-spherical cavities forming the socket 25 for receiving the ball head 24. However, the bracket 26 is formed with the channel 28 wider relative to the ball head 24 than in the case of the channels 7 of the brackets 5, 5' so that the ball head 24 can be pulled out of the socket 25, the walls 29 flexing to release the ball head. The ball head 24 may, as shown, be formed at the end of a member 30 brazed into the inner end of

the tubular stay part 17 or be a separate member secured to the member 30 by a screw.

The mirror mounting projects outwardly from the side of the lorry and enables the frame carrying the mirror head to be folded inwardly against the side of the cab when the lorry is to be driven through a narrow entrance. Should the driver forget to do this and the mirror head or the frame be struck, or if the mirror head or the frame be struck by a passing vehicle, the frame will pivot about the brackets 5, 5' and ride the blow thus reducing the chances of the mirror head being damaged. If the mirror head receives a blow on its face or is pushed in the same direction as the normal direction of vehicle travel with a force exceeding a predetermined value sufficient to pull the ball head 24 out of its socket 25, the frame 2 will pivot forwardly towards the side of the lorry cab, the ball heads 3, 3' turning in their respective sockets 4, 4'. The ball head 24 of the stay 16 is also rotatable in its socket 25, and by virtue of the two part construction and disposition of the stay, the stay is able to collapse upon the mirror head or the frame receiving a blow or being pushed in the opposite direction to the normal direction of vehicle travel. To avoid the stay parts 17, 18 locking in line they are, as shown, slightly inclined to one another. The channels 7 in the brackets 5, 5' receive the free ends of the frame 2 as it folds towards the cab C, and similarly, the channel 27 in the bracket 26 receives the inner end of the stay part 17 as the stay collapses so that the rotation of the frame is not hindered.

The force which must be applied to the mirror head or the frame to cause the ball head 24 to be pulled out of the socket 25 in the bracket 26 is preferably about 50 pounds. This force can be determined by the choice of plastics material for the bracket 26, the spacing of the walls 29 and their thickness.

The mirror mounting described avoids vibration and reduces noise. All metalwork may be coated with a plastics material such as P.V.C. to avoid rust.

It will be appreciated that various modifications may be made to the mirror mounting described without departing from the scope of the invention as defined by the appended claims.

For example, a stay having the pull-out features described above, and which is preferably collapsible, may be used with a mirror mounting arm which is secured to the vehicle at one point only.

The mounting of the U-shaped frame as herein described forms the subject of co-pending Application No. 62087/69 (Serial No. 1339123) from which this application is divided.

WHAT WE CLAIM IS:—

1. A vehicle external rear-view mirror mounting, comprising a mirror supporting arm pivotally connected to means adapted to be secured to a vehicle body or door, and a stay for steadying the mirror supporting arm and connected between the arm and a stay bracket adapted to be fixed to the vehicle body or door, the stay being releasably connected to said stay bracket by a head on the stay such that the head will separate from the stay bracket upon a force exceeding a predetermined value being applied to the mirror supporting arm.
2. A mirror mounting as claimed in claim 1, wherein the stay bracket includes a socket of resilient plastics material into which the head at the end of the stay fits, said socket being expandable to allow the head to be withdrawn when the force applied exceeds said predetermined value.
3. A mirror mounting as claimed in claim 2, wherein the head is a ball head and the stay bracket includes a channel the facing surfaces of which are formed with part-spherical cavities forming the socket for receiving the ball head.
4. A mirror mounting as claimed in claim 3, wherein said channel is defined by a pair of walls the thickness of which is such that the ball head can be pulled out of the socket by virtue of the walls flexing to release the ball head.
5. A mirror mounting as claimed in any preceding claim, wherein the stay is collapsible.
6. A mirror mounting as claimed in claim 5, wherein the stay comprises two parts which are pivotally interconnected, the outer end of the stay being pivotally connected to the mirror supporting arm and the head being rotatable in said socket.
7. A mirror mounting as claimed in claim 6, wherein the pivotal interconnection between the two stay parts incorporates means for maintaining the stay parts in any position to which they are adjusted.
8. A mirror mounting as claimed in any preceding claim, wherein the mirror supporting arms comprises a generally U-shaped frame having its free ends pivotally connected respectively to two brackets adapted to be secured to a vehicle body or door.
9. A vehicle equipped with an external rear-view mirror mounting as claimed in any preceding claim.
10. A vehicle equipped with an external rear-view mirror mounting having a mirror supporting arm comprising a generally U-shaped frame with its free ends pivotally connected to the vehicle body or door so that the frame can turn relative to the vehicle body or door about a substantially vertical axis, and a stay which is pivotally connected at one of its ends to the frame at a position spaced from said vertical axis and is provided at its other end with a head which is rotatably and releasably retained in a stay bracket, secured to the vehicle body or door at a position spaced horizontally from said vertical axis, such that the head can turn relative to the stay bracket about a substantially vertical axis and will separate from the stay bracket upon a force exceeding a predetermined value being applied to the frame, said stay comprising pivotally interconnected parts.

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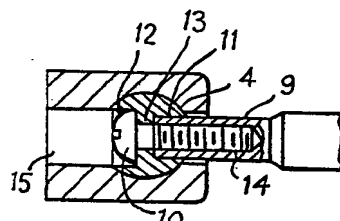
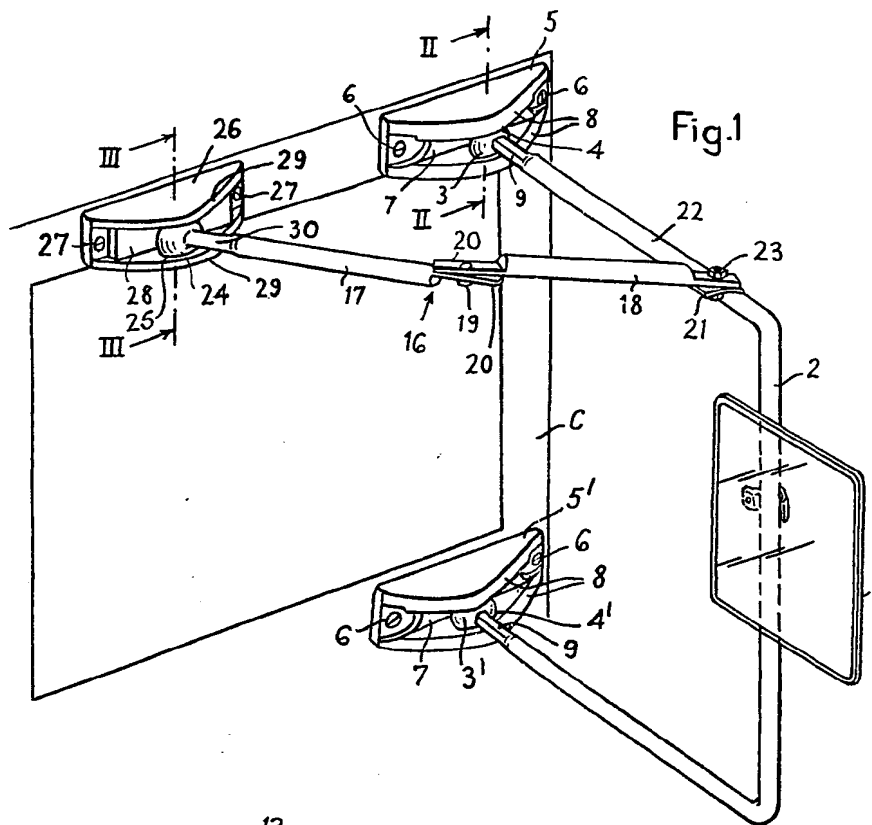


Fig. 2

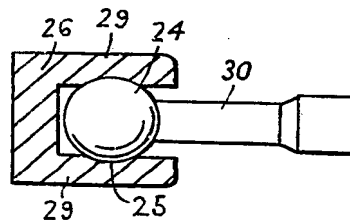


Fig. 3